

Animating the Spy Fantasy
Splinter Cell Blacklist

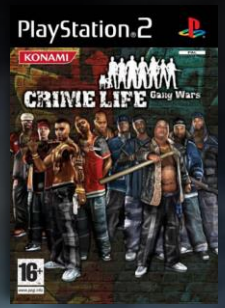
Kristjan Zadziuk
Animation Director – Ubisoft Toronto

WHO AM I...

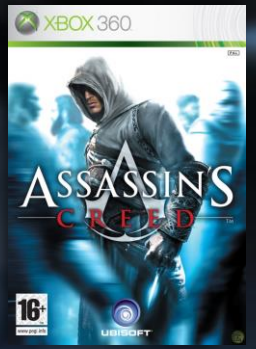

Hot
House
Creations


Who Wants To Be A Millionaire
Junior
Eidos
PlayStation


PlayStation.2
American Idol
Codemasters


PlayStation.2
KONAMI
CRIME LIFE
Gang Wars


UBISOFT
MONTREAL

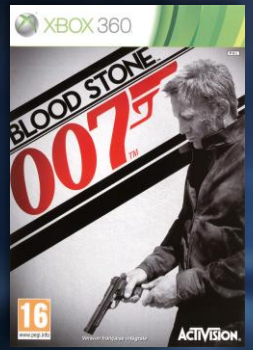

XBOX 360
ASSASSINS
CREED


PIVOTAL
GAMES


?


BIZARRE
CREATIONS


XBOX 360
XBOX LIVE
blur
ACTIVISION


XBOX 360
BLOOD STONE
007
ACTIVISION

WHO AM I...

UBISOFT TORONTO



Overview

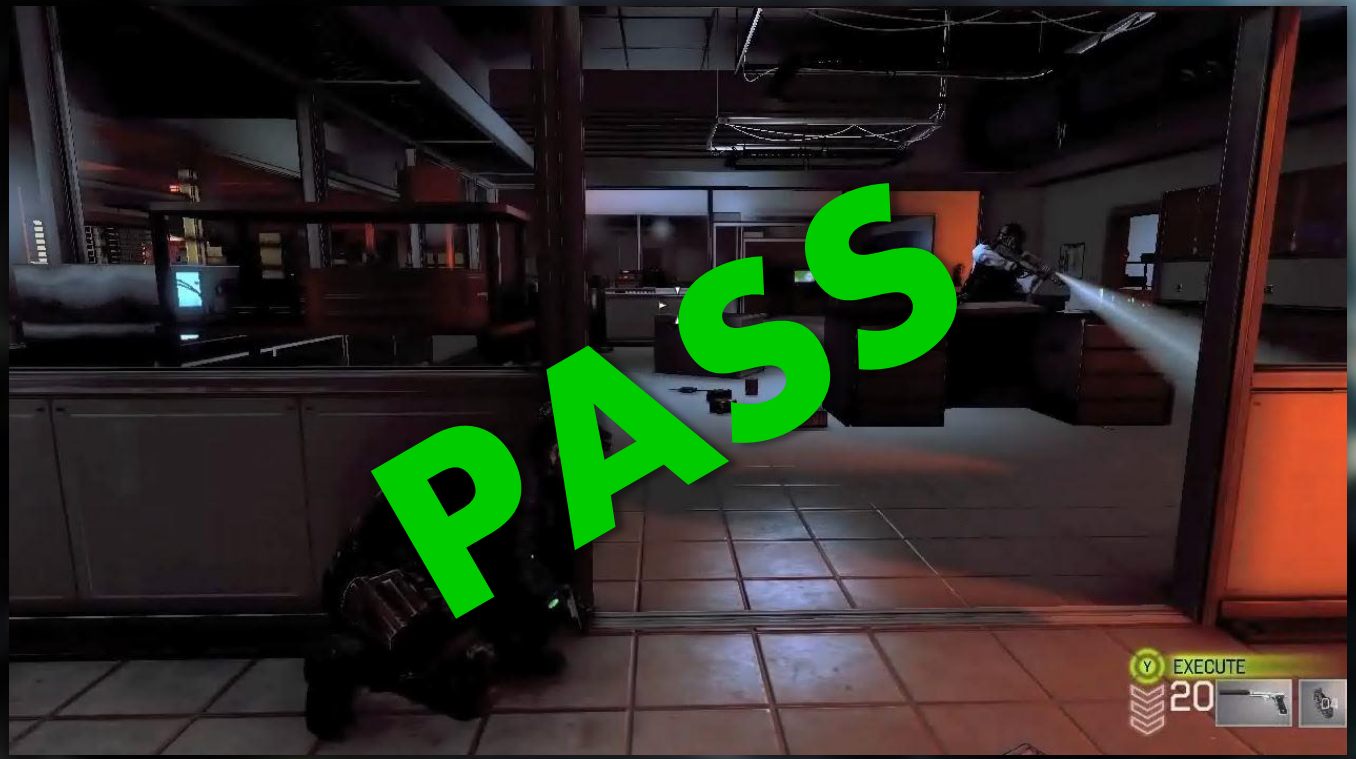
1. Conception
2. Finding Sam Fisher
3. Animation Pipeline & Tools
4. Everything in Motion
5. Animation Contrast
6. AI Behaviours


Conception

КОМ



KOM



SC:B ANIMATION MANDATE

- Make animation more fluid
- Return to Stealth Roots
- Player Choice
- Improved AI behaviours

PILLARS





PILLARS



PILLARS

PANTHER

- PROWL
- SURGICAL STRIKE
- RESPONSE

REALISM

PILLARS

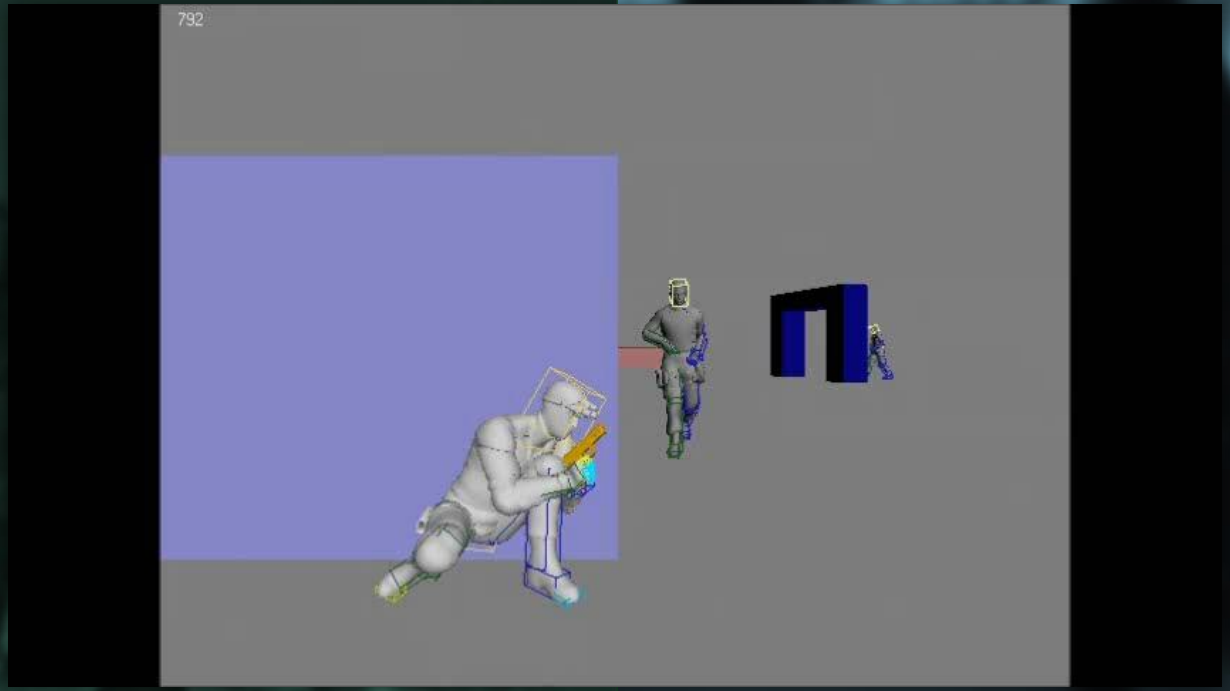
PANTHER

- PROWL
- SURGICAL STRIKE
- RESPONSE

REALISM

- AWARE
- TACTILE
- REACTIVE

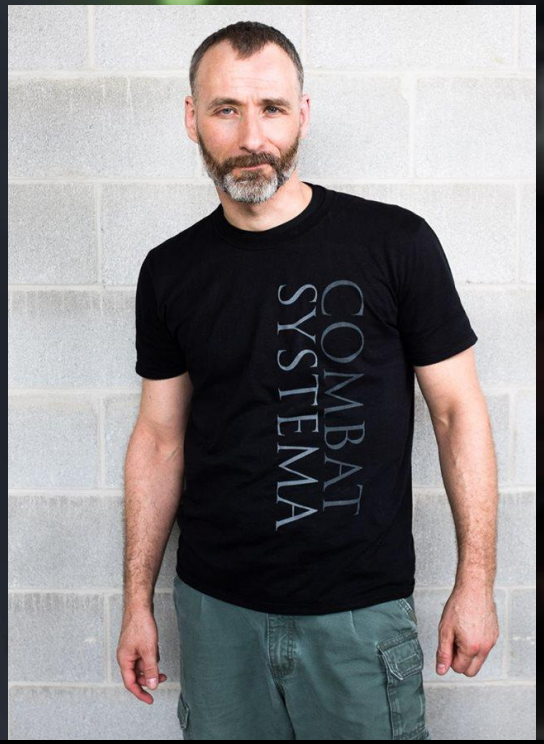
FIRST CONCEPT





Finding Sam Fisher

THE REAL SAM FISHER



Kevin Secours, B.Ed.

- 30 years experience in martial arts
- Russian Systema
- 6TH Dan Goshinbudo
- 3RD Dan Modern Kemp Jujitsu
- 1ST Dan Aki Ryu Jiu-Jitsu
- Instuctor in Shaolin Chuanshu
- Tai Chi and Yoga

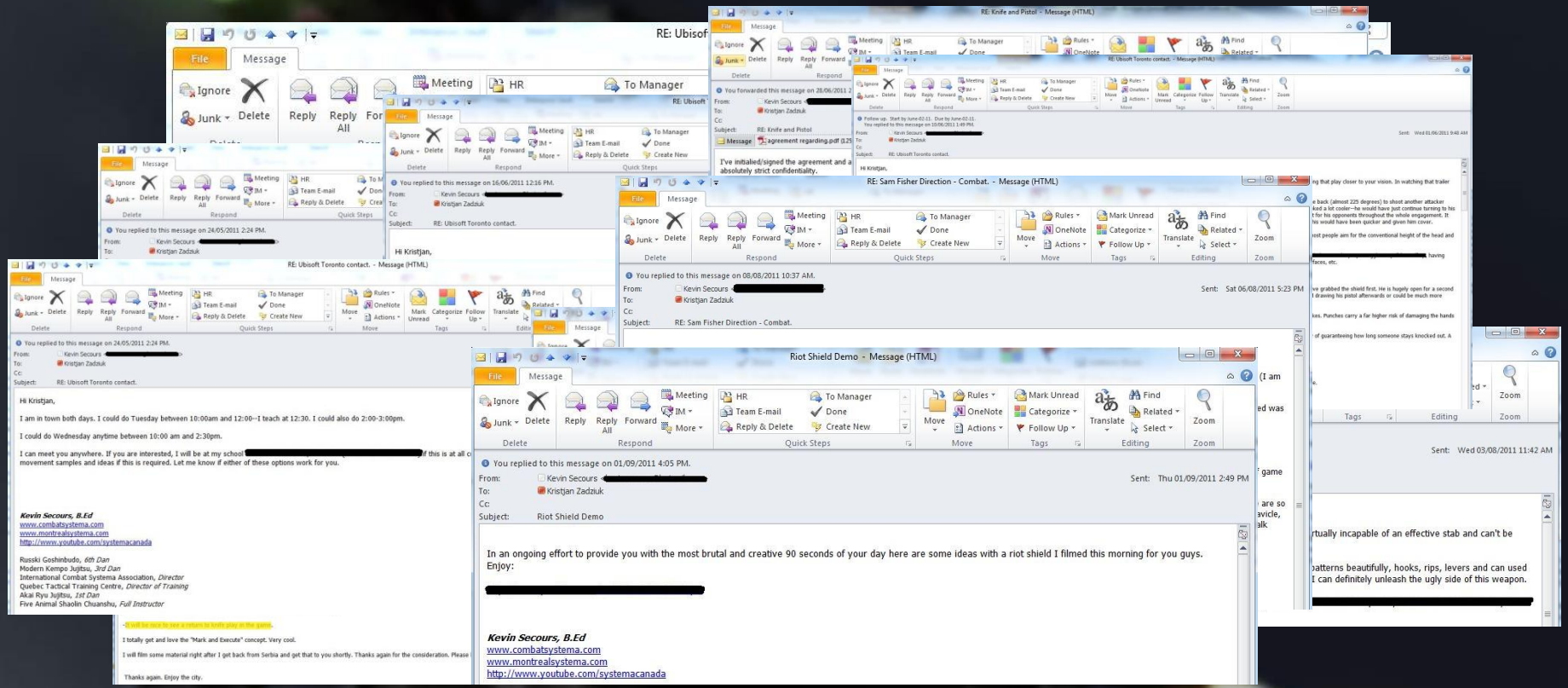
www.combatsystemaonline.com

KEVINS PITCH



WWW.COMBATSYSTEMAONLINE.COM

COMMUNICATION



COMMUNICATION



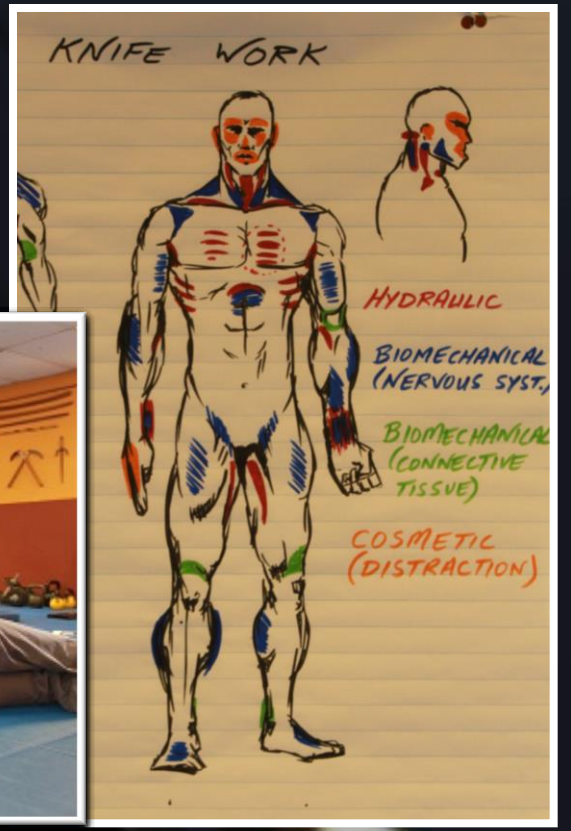
BRINGING BACK THE KNIFE



KARAMBIT







SURGICAL STRIKE


Kristjan Zadziuk
May 31, 2011 via mobile
FYI I think i've just met Sam Fisher!!!
Like · Comment · Share
71
11



Animation Pipeline & Tools

WHAT WE NEEDED



"More of Everything..."

Maxime Beland

THE PROBLEM

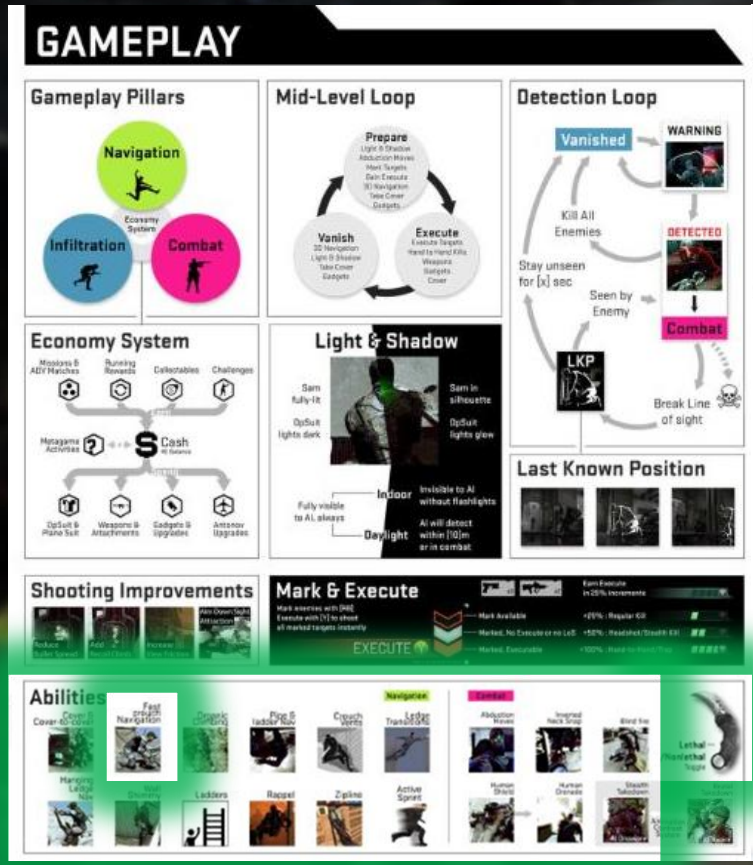


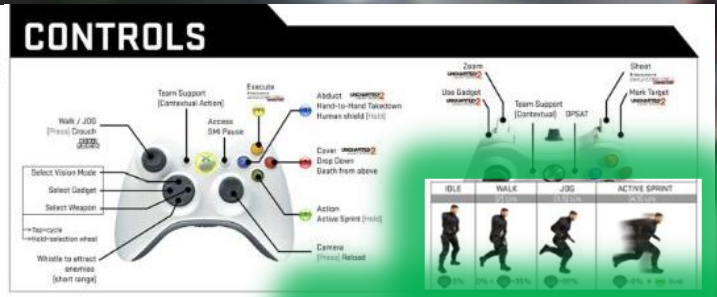


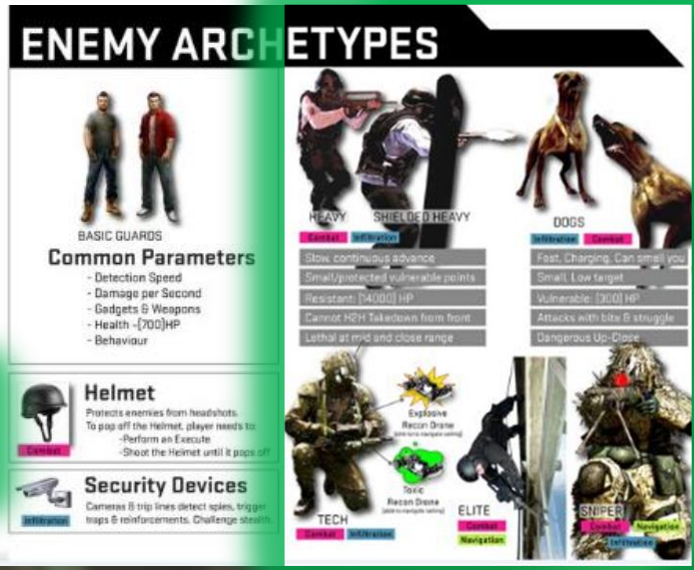
"All three are important"

Maxime Beland

SCOPE


GAMEPLAY
Gameplay Pillars
Navigation
Infiltration
Combat
Economy System
Mid-Level Loop
Prepare
Execute
Vanish
Detection Loop
Vanished
WARNING
Kill All Enemies
DETECTED
Stay unseen for [x] sec
Seen by Enemy
Combat
LKP
Break Line of sight
Light & Shadow
Sam fully-lit
Sam in silhouette
OpSuit lights dark
OpSuit lights glow
Indoor
Invisible to AI without flashlights
Fully visible to AI, always
Daylight
AI will detect within [10]m or in combat
Last Known Position
Shooting Improvements
Mark & Execute
EXECUTE
Abilities
Navigation
Combat
Fast grapple Navigation
Ladders
Rappel
Zipline
Active Sprint
Lethal
Non-lethal


CONTROLS
Walk / JOG
Crouch
Select Vision Mode
Select Gadget
Select Weapon
Whistle to attract enemies
Team Support
Execute
Access SMI Pause
Abduct
Hand-to-Hand Takedown
Human shield
Cover
Drop Down
Death from above
Action
Active Sprint
Camera
Reload
Zoom
Use Gadget
Team Support
Shoot
Mark Target
IDLE
WALK
JOG
ACTIVE SPRINT


ENEMY ARCHETYPES
BASIC GUARDS
Common Parameters
- Detection Speed
- Damage per Second
- Gadgets & Weapons
- Health -(700)HP
- Behaviour
Helmet
Protects enemies from headshots.
To pop off the Helmet, player needs to:
-Perform an Execute
-Shoot the Helmet until it pops off
Security Devices
Cameras & trip lines detect spies, trigger traps & reinforcements. Challenge stealth.
HEAVY
SHIELDED HEAVY
DOGS
Slow, continuous advance
Small/protected vulnerable points
Resistant: [14000] HP
Cannot H2H Takedown from front
Lethal at mid and close range
Fast, Charging, Can smell you
Small, Low target
Vulnerable: [300] HP
Attacks with bite & struggle
Dangerous Up-Close
Explosive Recon Drone
Toxic Recon Drone
TECH
ELITE
SNIPER

ANIMATION BUDGET



40 MB



23 MB

WHAT WE NEEDED...

- **MOCAP**
  - VOLUME OF ANIMATION
  - GROUNDED MOVEMENT
  - CREATIVE DATA MANIPULATION
- **IMPROVE ANIMATION TOOLS**
  - INCREASED ANIMATOR CONTROL
  - MEMORY SAVINGS

MOCAP



MOCAP

TYPICAL SHOOT DAY



- Number of people on set
- Clear direction
- Collaborate

MOCAP

TYPICAL SHOOT DAY



- Number of people on set
- Clear direction
- Collaborate
- Respect the talent
- Not working... Move on
- Be ambitious

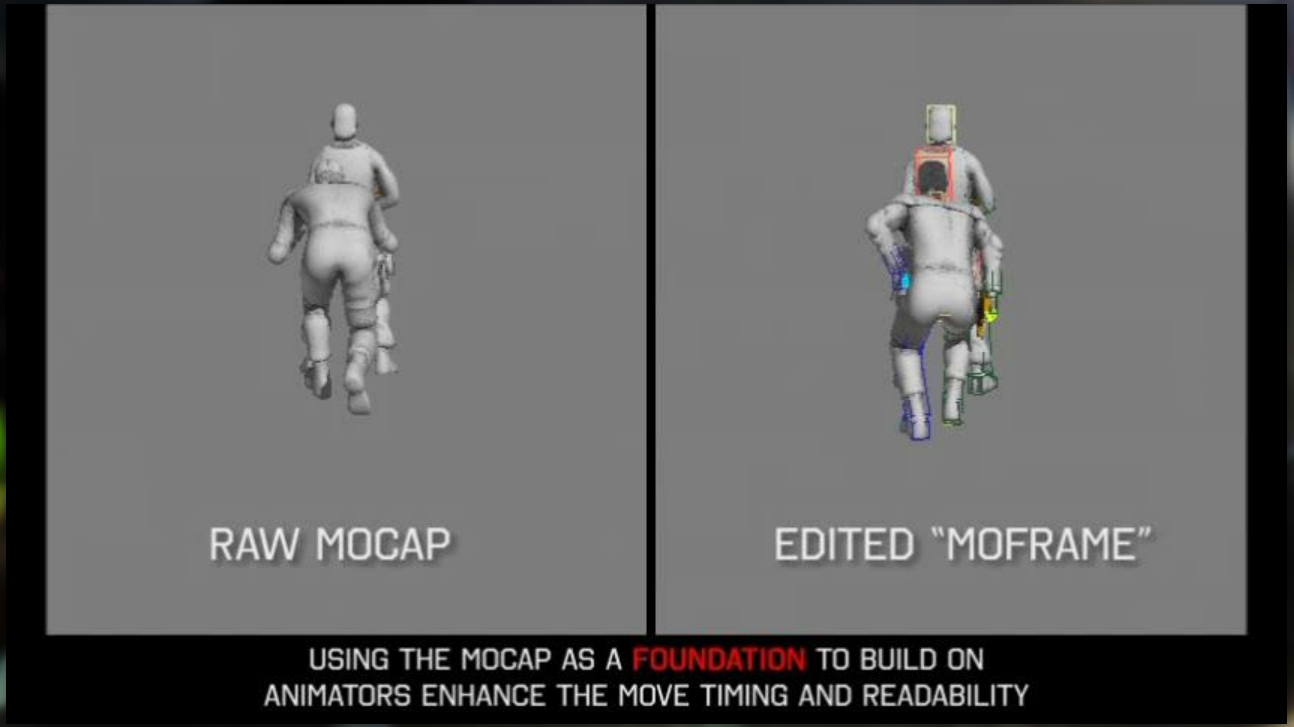
MOCAP

OUR PLAYGROUND



MOCAP

“MO-FRAME”

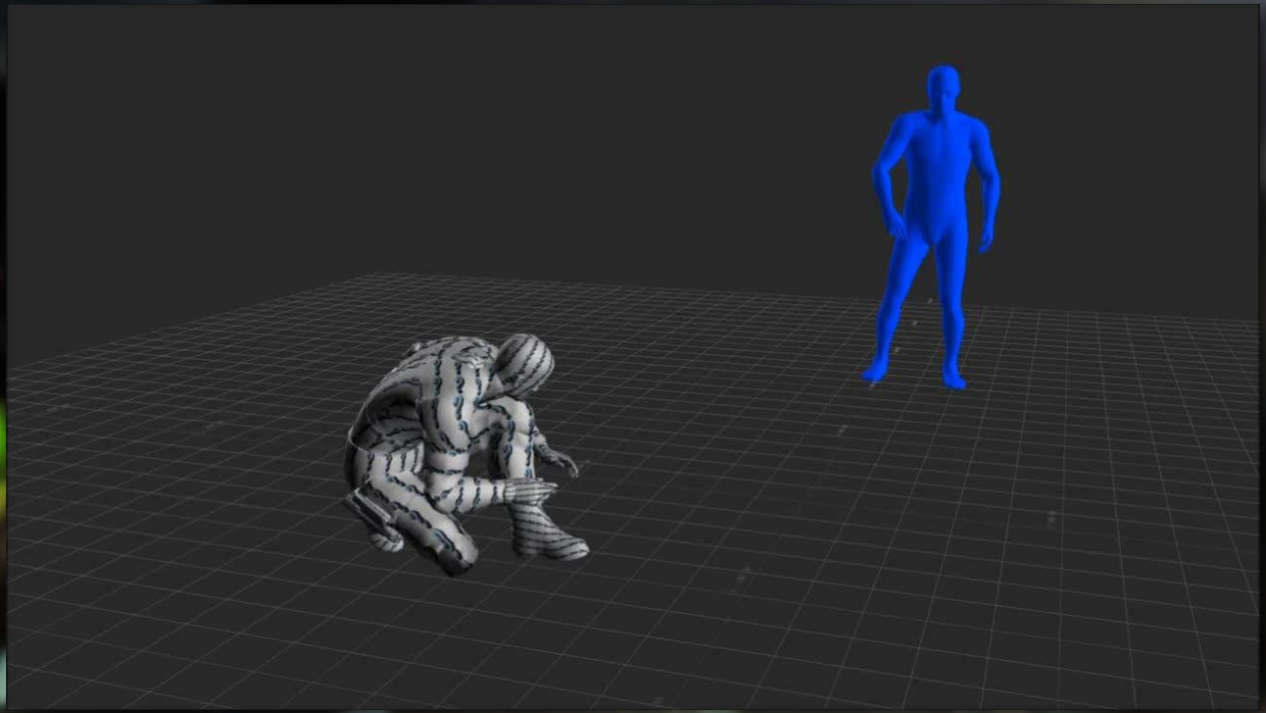


ABDUCTION BREAKDOWN



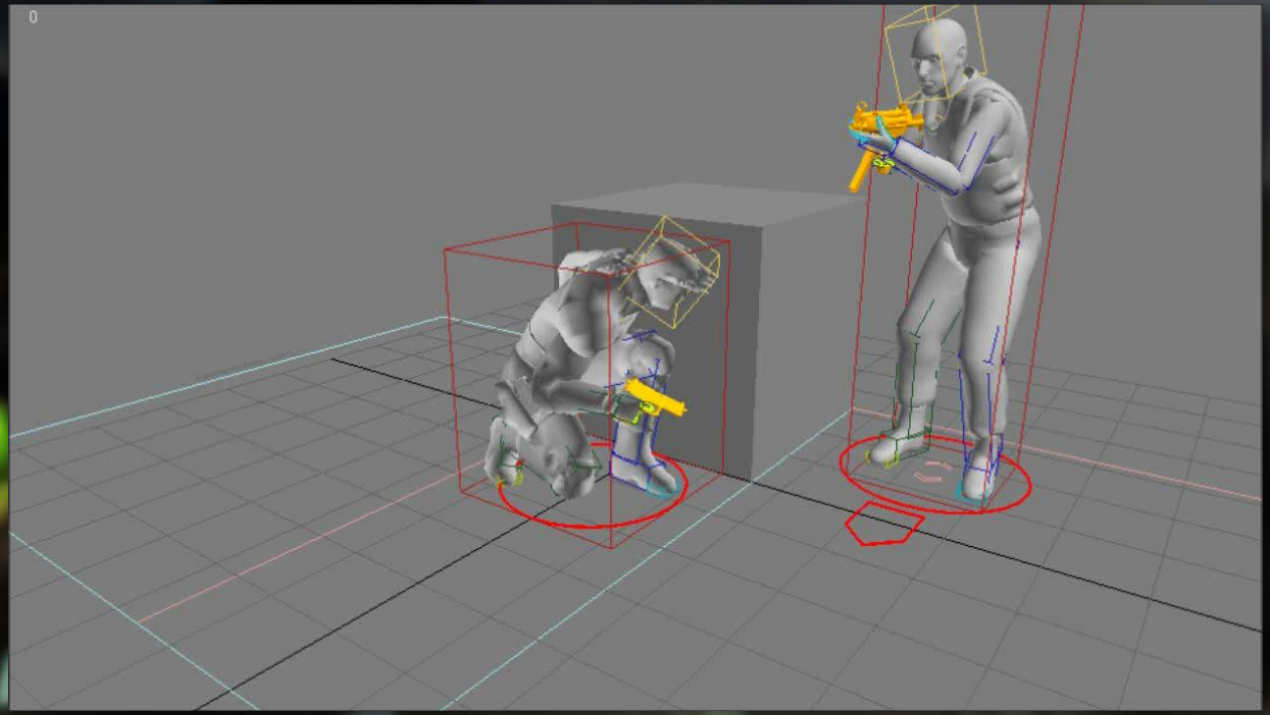
ABDUCTION BREAKDOWN

RAW DATA



ABDUCTION BREAKDOWN

MAIN POLISH PASS



ABDUCTION BREAKDOWN

FINAL POLISH

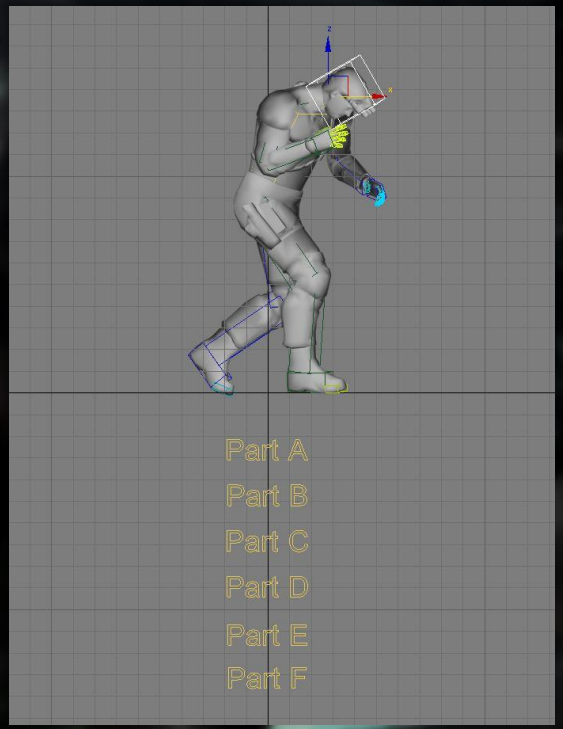
SURGICAL STRIKE

RESPONSE

AWARE

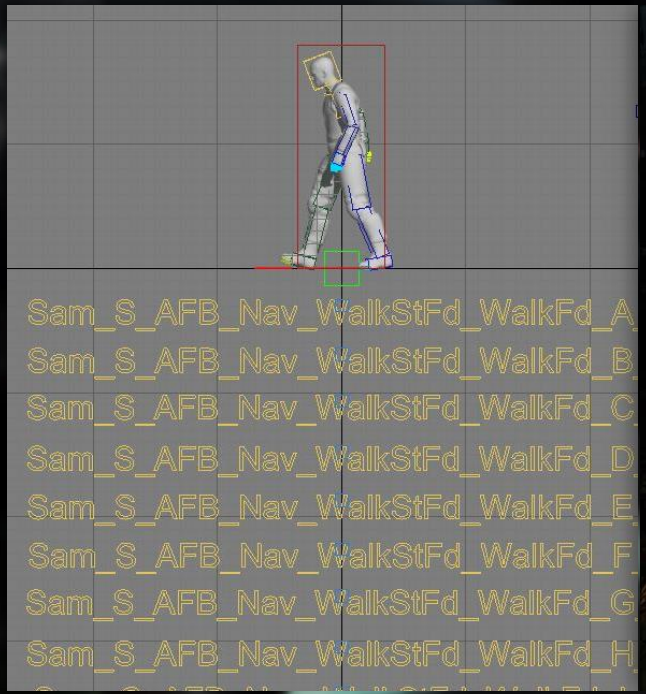


VARIETY NODE





REPLACEMENTS







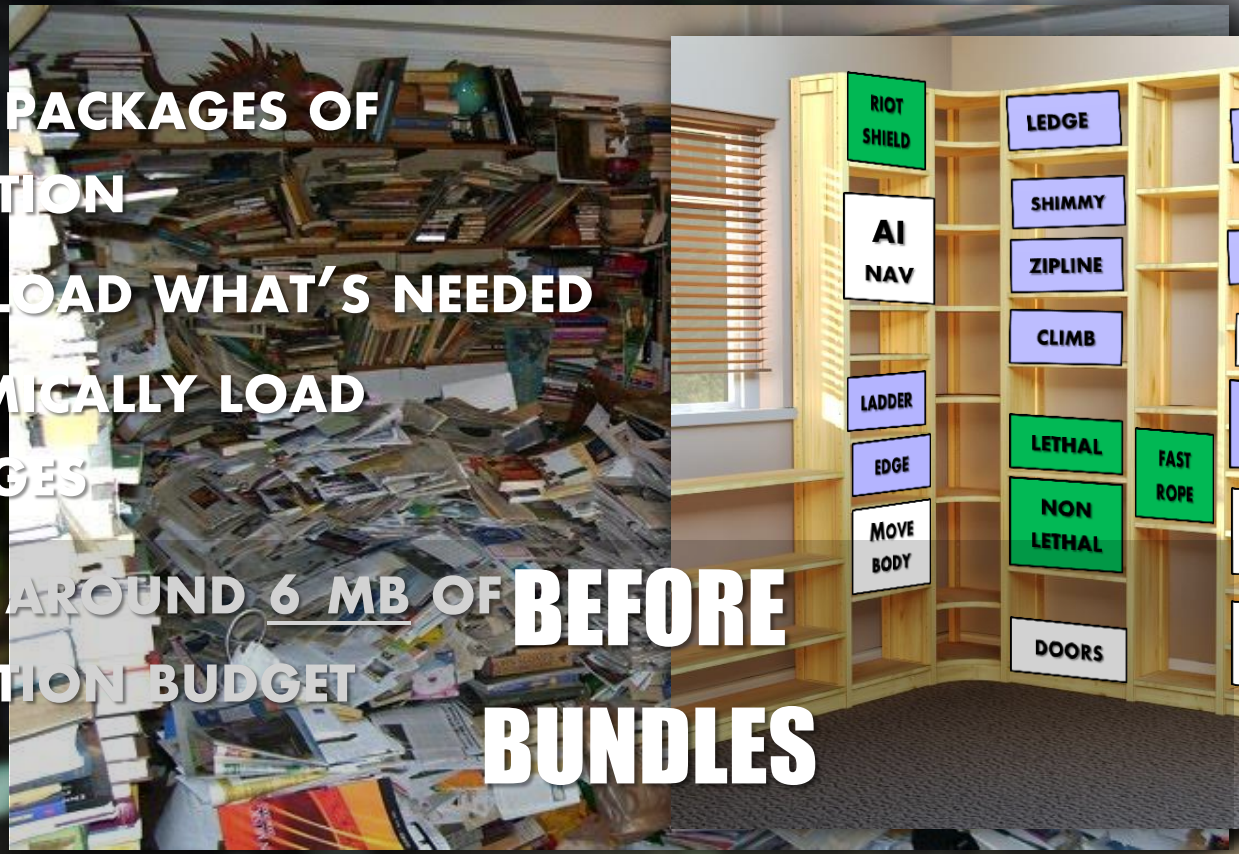
"We need to find a way to reduce the animation foot print"

Michael Wasilewski


Sam Navigation
Hand to Hand
Sam Cover
Misc
HumanShield
Mark and Execute
Door
NPC
0
2
4
6
8
10
12
MB
August 2012
Sun Mon Tue Wed Thu Fri Sat
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31
34 MB

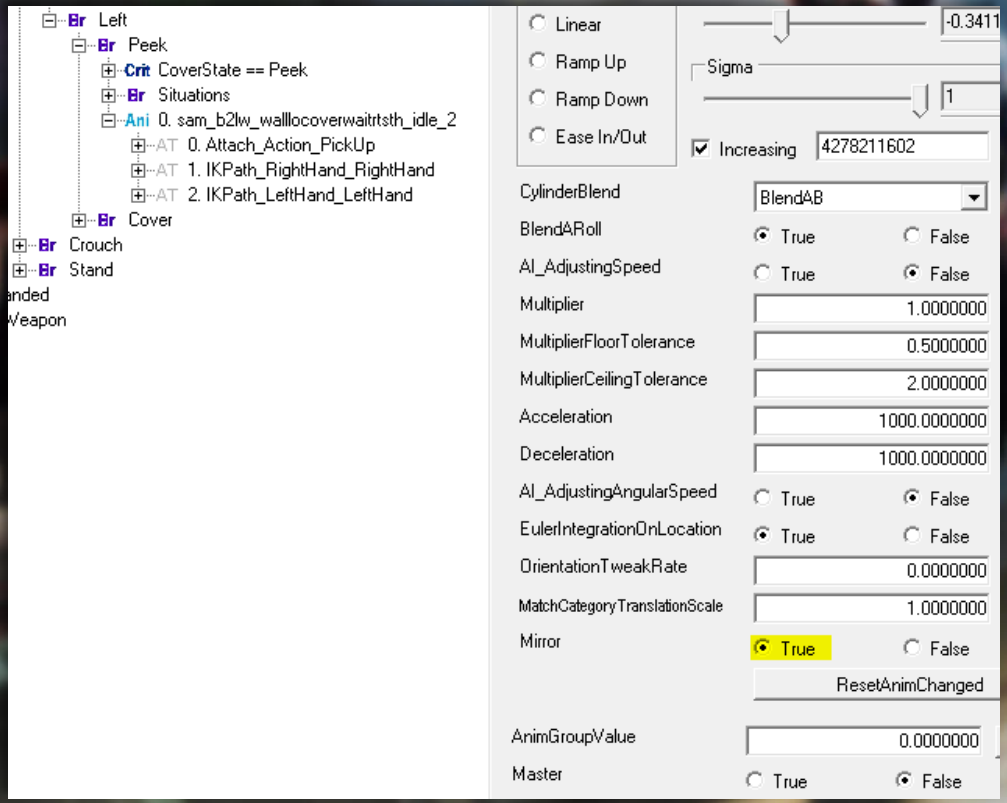
ANIMATION BUNDLES

- Small packages of animation
- Only load what's needed
- Dynamically load packages
- Saved around 6 mb of animation budget



MIRRORING

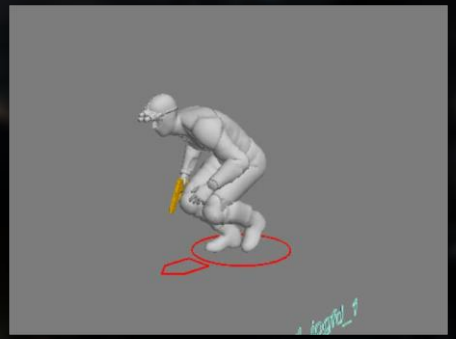
- Reduced animation duplication
- Easy to use
- Saved around 4 MB of animation data



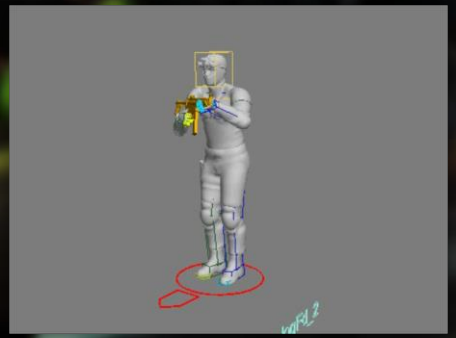
LAYERS

PROWL

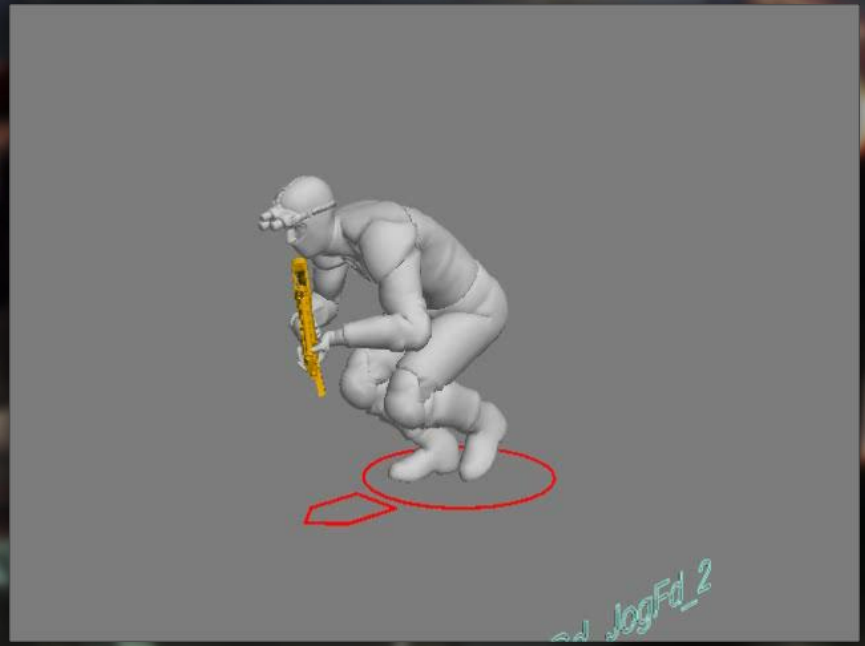
RESPONSE



BASE ANIMATION



WEAPON LAYER



FINAL ANIMATION


Sam Navigation
Hand to Hand
Sam Cover
Misc
HumanShield
Mark and Execute
Door
NPC
0
1
2
3
4
5
September 2012
Sun Mon Tue Wed Thu Fri Sat
1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30
17 MB



Everything in Motion

OBJECTIVE



NAVIGATION



NAVIGATION

PROWL

RESPONSE

TACTILE

REACTIVE



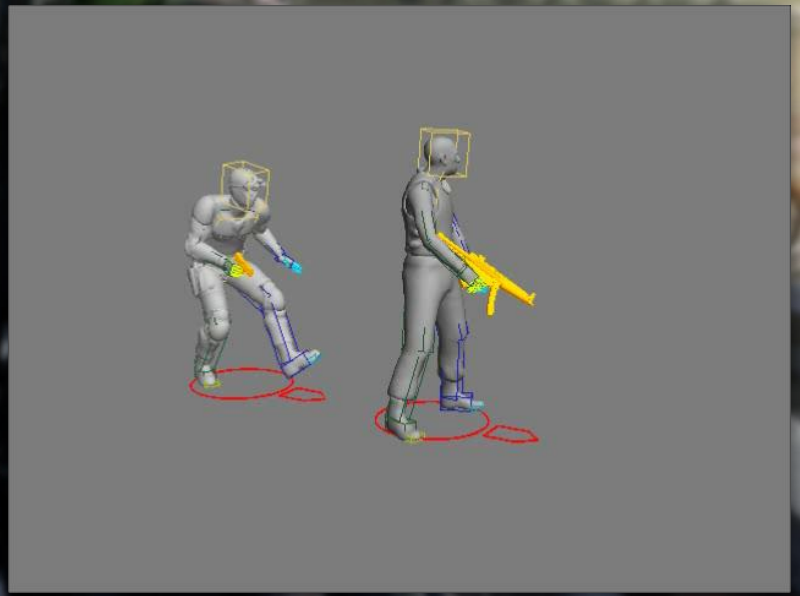
HAND TO HAND

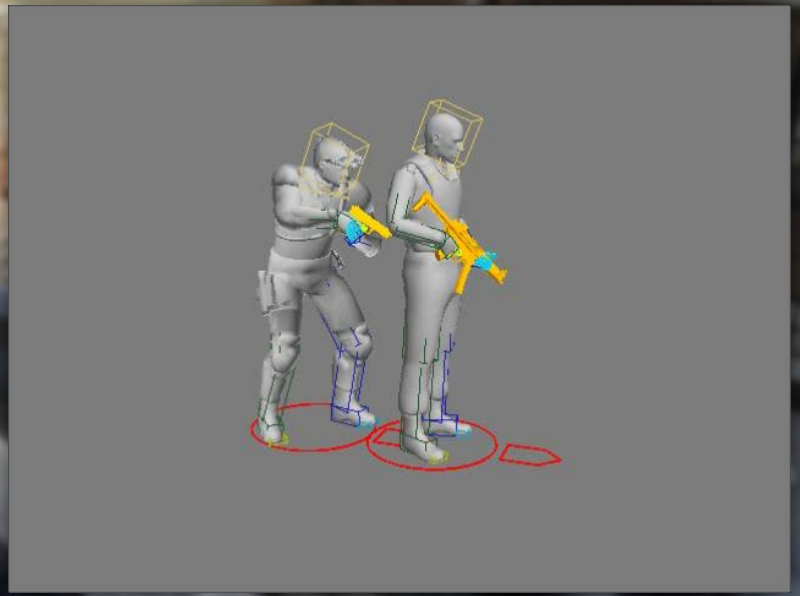
PROWL

SURGICAL STRIKE

RESPONSE

Open Combat:

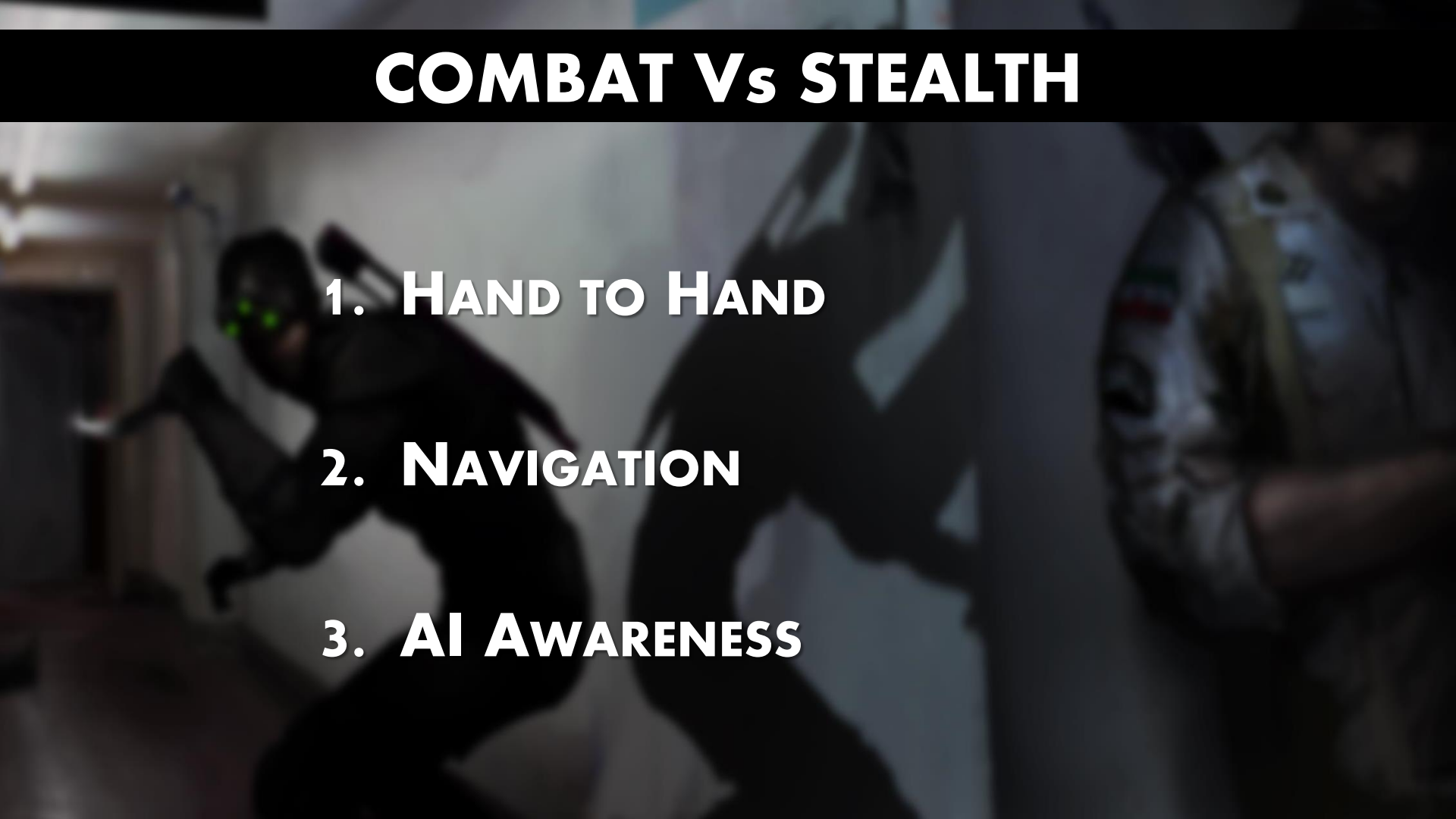




Moving

Static


Animation Contrast



COMBAT Vs STEALTH

1. Hand to Hand
2. Navigation
3. AI Awareness

HAND TO HAND

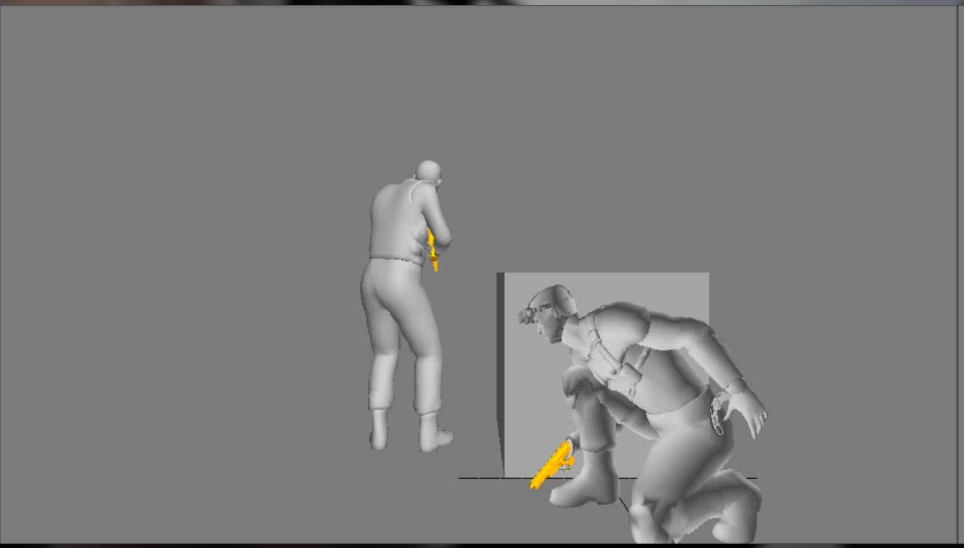
AWARE

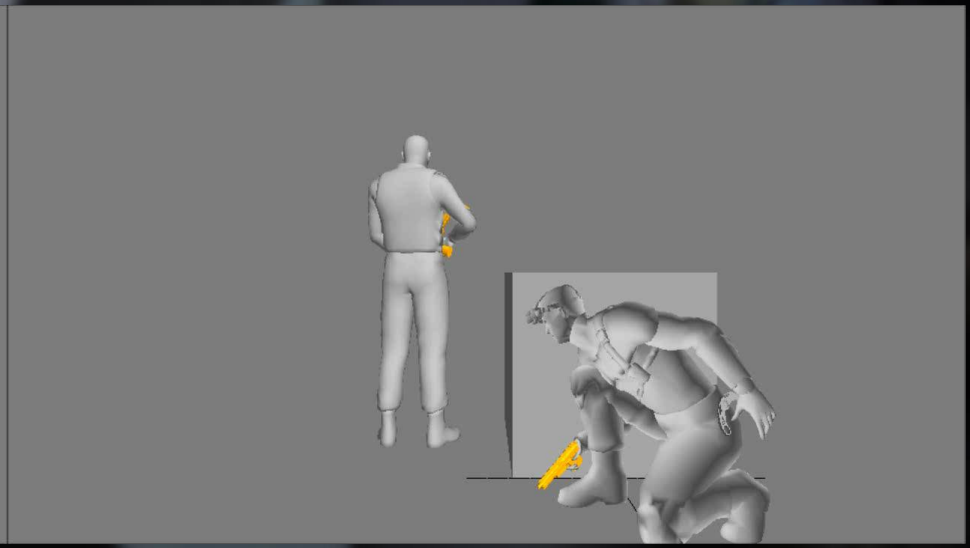
SURGICAL STRIKE

Abductions

REACTIVE

TACTILE





Combat

Stealth

HAND TO HAND

Abductions

Cover Type



X2

Cover Direction



X2

AI Orientation



X2

Lethal / Non Lethal



X2

Combat / Stealth



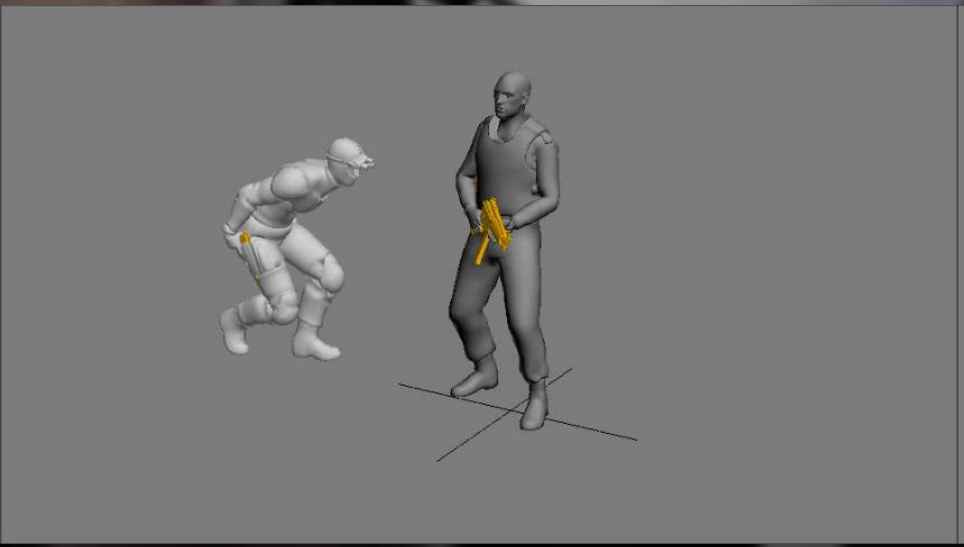
X2

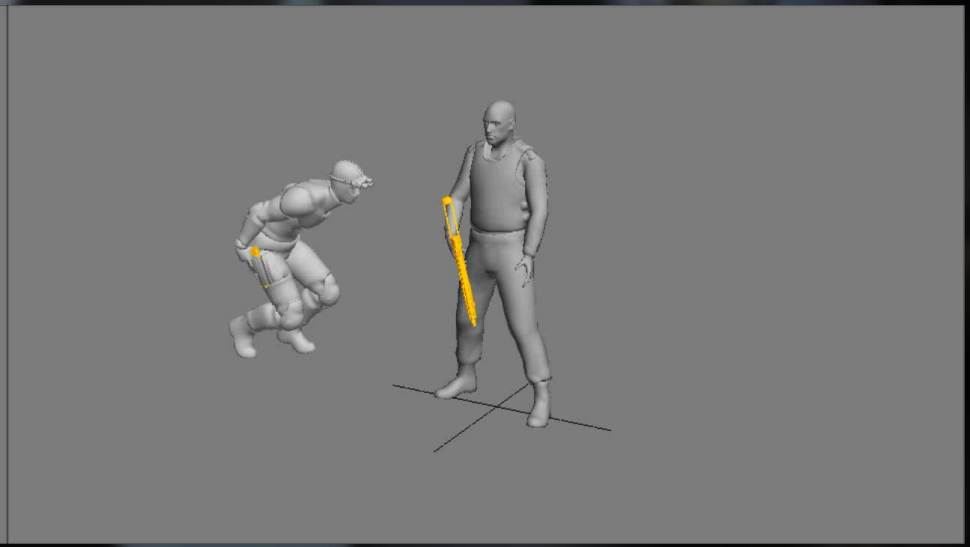
32

Unique animations

HAND TO HAND

Open Combat:





Lethal

Non Lethal

HAND TO HAND

Open Combat:

Static / Moving



X2

Direction of Attack



X4

Lethal / Non Lethal



X2

Combat / Stealth



X2

32

Unique animations

HAND TO HAND

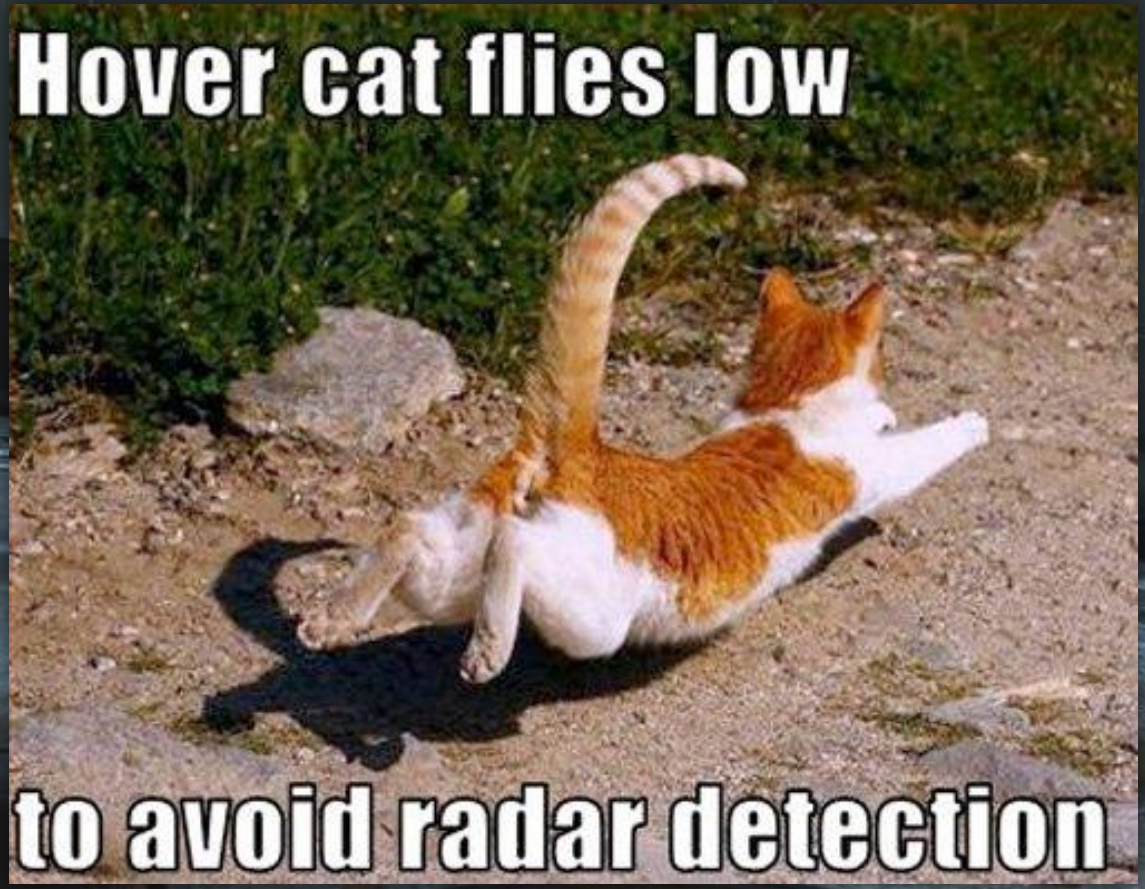
Don't forget...

Ariel Takedown	Contextual Takedown	Mark & Execute
		
8	16	10

34

Unique animations

NAVIGATION



NAVIGATION



NAVIGATION

First Static Test

AWARE

REACTIVE



NAVIGATION



No enemies within 10 meters

Enemy within 10 meters

Enemy with attack range


AI Behaviour

LIFE



IMPACT

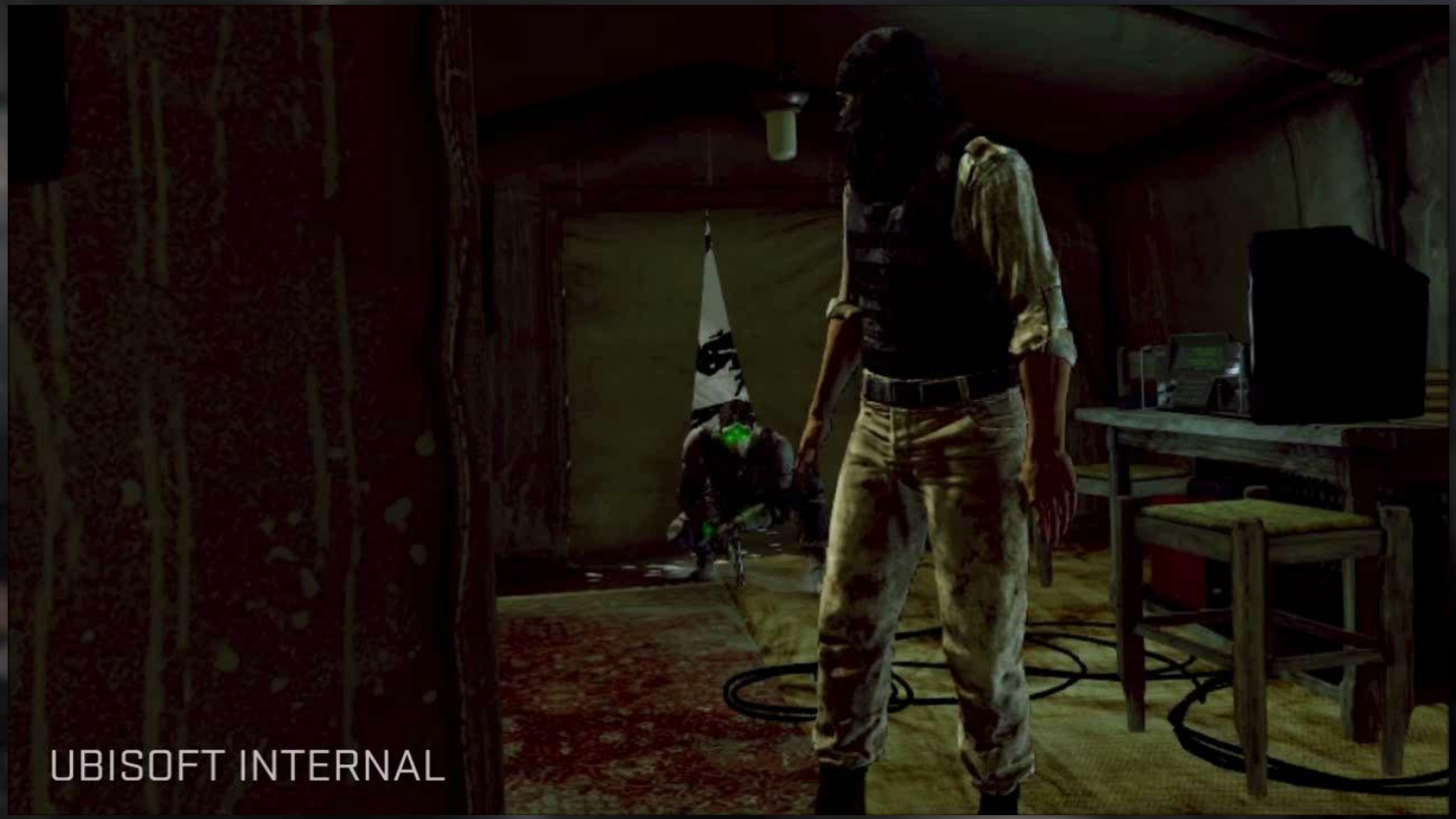


MOVING IMPACT



MOVEMENT SPEED + DIRECTION = MOMENTUM

REACTIONS



REACTIONS

Simple Manipulation

AWARE

REACTIVE

SURGICAL STRIKE



CHAIN OF EVENTS













CHAIN OF EVENTS







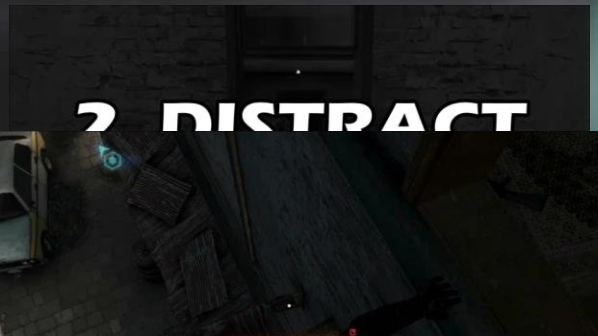






CHAIN OF EVENTS











CHAIN OF EVENTS













CHAIN OF EVENTS











CHAIN OF EVENTS





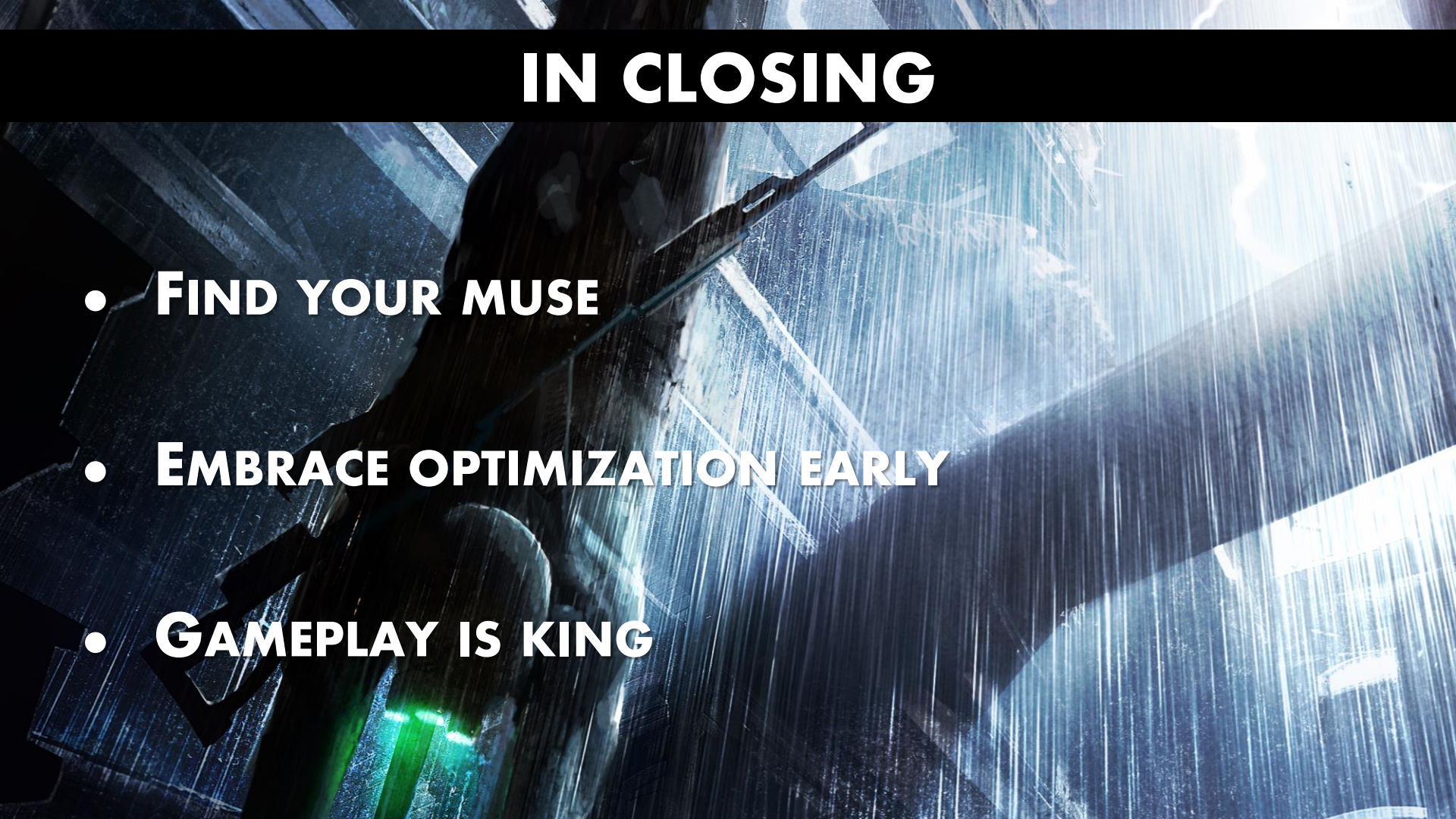






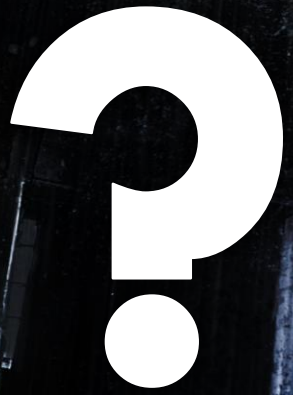


In closing



- Find your muse
- Embrace optimization early
- Gameplay is king

Thanks



Email: kristjan.zadziuk@ubisoft.com

@kriszadziuk